

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re reissue application of:

Patent No. : 5,948,525

Issued : September 7, 1999

Inventors : Masahiro Kimura

: Kohzo Takahashi

: Hiroji Kojima

: Koichi Abe

Title : BIAXIALLY STRETCHED

: POLYESTER FILM FOR

: FORMING CONTAINER

: AND METHOD OF

: PRODUCING THE FILM

1600 Market Street, 36th Floor

Philadelphia, PA 19103

Docket No.: 1001-RE-98

Dated: May 31, 2001

PRELIMINARY AMENDMENT

Box 7

Assistant Commissioner for Patents

Washington, DC 20231

Sir:

Kindly amend the Reissue Application as follows before action on the merits in a format in accordance with the new rules, using clean copies of the Specification and Claims and also marked-up versions of such.

In the Specification (Clean copy as amended)

Please replace Table 2 in Column 21 with the following:

Polyester			
	Example 4	Example 5	Example 6
Ethylene terephthalate unit (wt. %)	88	95	95
Ethylene naphthalate unit (wt. %)	12	5	5
Particle kind	Aluminum silicate	Aluminum silicate	Aluminum silicate
Dw (μm)	0.2	0.2	0.2
Relative standard deviation	0.10	0.10	0.10
Amount added (wt. %)	0.3	0.3	0.3
Length/breadth ratio	1.01	1.01	1.01

Polyester			
Mohs hardness	5	5	5
Amount of metallic carboxylate (10^{-5} mol/g)	40	40	40
Article composition Al (mol/100g)	1.08	1.08	1.08
Si (mol/100g)	0.31	0.31	0.31
M (mol/100g)	0.34	0.34	0.34
Crystal state	Amorphous	Amorphous	Amorphous
Specific surface area (m^2/g)	25	25	25
3.5/Dw	17.5	17.5	17.5
Particle strength (kgf/mm^2)	20	20	20
Number of crystal melting peaks	1	1	1
DEG (wt. %)	1.5	1.3	1.3
Intrinsic viscosity	0.70	0.70	0.70
Thermal crystallization parameter ($^{\circ}\text{C}$)	102	71	71
Melting point ($^{\circ}\text{C}$)	230	246	246
Film/Can Property			
Thickness (μm)	25	25	20
Thickness irregularity (%)	7	15	13
Refractive index in the direction of width	1.508	1.525	1.511
Surface roughness (μm) Ra	0.014	0.012	0.015
Rt	0.177	0.139	0.177
NMR relaxation time (msec)	290	400	230
Carboxyl terminal group (equivalence/ton)	34	34	34
DSC peak ($^{\circ}\text{C}$)	185	197	224
Formability a	B	A	A
b	B	A	B
Scrape resistance	A	A	A
Impact resistance	B	A	A

Polyester			
Taste property	A	A	A

Note) In the table, values of wt. % of ethylene terephthalate unit and ethylenenaphthalate unit were calculated in the form where diethylene glycol components were added.

In the Claims (Clean copy as amended)

6. A biaxially stretched polyester film for forming a container, according to any one of Claims 1 - 4, wherein the relaxation time of a carbonyl portion by structure analysis by solid high resolution NMR is 270 msec or longer.

7. A biaxially stretched polyester film for forming a container, according to any one of Claims 1 - 4, characterized in that a DSC peak is present at 220° C. or lower.

8. A biaxially stretched polyester film for forming a container, according to any one of Claims 1 - 4, characterized by containing 0.005 - 10% by weight of particles wherein the volume average particle diameter is 0.005 - 5 μm and the relative standard deviation σ expressed by the expression below is 0.5 or less:

$$\sigma = (\Sigma(Di-D)^2/n)^{1/2}/D$$

$$D = \Sigma Di/n$$

where

σ : relative standard deviation

D: number average particle diameter (μm)

Di: particle diameter (μm)

n: number of particles (number).

10. A biaxially stretched polyester film for forming a container, according to claim 8, wherein the length/breadth ratio of the particles is 1.0 - 1.2, and the Mohs hardness thereof is less than 7.

11. A biaxially stretched polyester film for forming a container, according to claim 8, characterized in that a metallic carboxylate salt is present on surfaces of the particles in an amount of 10^{-5} mol or more relative to 1 g of the particles.

12. (Amended) A biaxially stretched polyester film for forming a container, according to claim 8, characterized in that the particles are aluminum silicate particles having the following composition:

$$0.9 \leq Si \leq 1.5$$

$$0.1 \leq Al \leq 0.8$$

$$0.1 \leq M \leq 0.8$$

$$0.8 \leq M/Al \leq 1.5$$

where

Si: number of moles of silicon atoms in 100 g of the particles,

Al: number of moles of aluminum atoms in 100 g of the particles,

M: number of moles of alkaline metal atoms in 100 g of the particle.

14. A biaxially stretched polyester film for forming a container, according to claim 12, characterized in that the volume average particle diameter D_w (μm) and the specific surface area S (m^2/g) of the aluminum silicate particles satisfy the relationship of $S \geq 3.5/D_w$.

15. A biaxially stretched polyester film for forming a container, according to claim 12, characterized in that the strength (S_{10}) at 10% deformation of the aluminum silicate particles satisfies the relationship of:

$$5 \text{ kgf/mm}^2 \leq S_{10} \leq 40 \text{ kgf/mm}^2.$$

16. A biaxially stretched polyester film for forming a container, according to claim 8, wherein the particles are organic macromolecular particles.

18. A biaxially stretched polyester film for forming a container, according to claim 8, characterized by containing 0.0001 - 1% by weight of an anti-oxidizing agent.

19. A biaxially stretched polyester film for forming a container, according to any one of Claims 1 - 4, characterized in that the film is formed after being thermally laminated on a metallic sheet.

20. A method of producing a biaxially stretched polyester film for forming a container defined in any one of Claims 1 - 4, characterized by separately producing polyethylene terephthalate and polyethylene naphthalate, and then kneading them to obtain a mixture of polyethylene terephthalate and polyethylene naphthalate, and producing a film from the mixture.

Remarks

The status of the claims is that Claims 1 - 21 are all pending.

Claims 6 - 8, 10 - 12, 14 - 16 and 18 - 20 have been amended at line 2 with respect to claimed dependencies. In particular, Claims 6 - 8 have been amended to change "claim 5", "claim 6" and "claim 7", respectively, to --any one of Claims 1 - 4--. Claim 10 has been amended to change the dependency from "9" to --8--; Claim 11 has been amended to change "10" to --8--; Claim 12 has been amended to change "10" to --8--; Claim 14 has been amended to change "13" to --12--; Claim 15 has been amended to change "14" to --12--; Claim 16 has been amended to change "15" to --8--; and Claim 18 has been amended to change "17" to --8--. Also, Claims 19 and 20, at line 2, have been amended to change "claim 1" to --any one of Claims 1 - 4--. These changes are made essentially to reinstate proper dependencies from those set forth in the original Application Serial No. 08/983,054 as it was filed on January 26, 1998. An amendment under 37 C.F.R. §1.312 was submitted in the original application on October 26, 1998, which was received by the Patent Office on October 28, 1998. However, no indication was made that the above-described changes were made on the record and the original Patent 5,948,525 issued on September 7, 1999 without such changes.

We have also amended the Specification to correct a minor typographical error in Table 2 by substituting --95-- in place of "90" on line 1 of the body of that Table.

Support for the changes in this Preliminary Amendment is in the original Application Serial No. 08/983,054 as it was filed on January 26, 1998. Therefore, no new matter has been added.

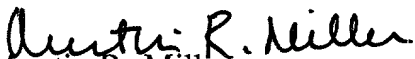
The Applicants have already filed a Petition for a Certificate of Correction in the file of the original patent regarding the Specification, but have not yet received the

Certificate. We intend to submit it for surrender along with the Patent since the relevant correction is covered in this Preliminary Amendment.

We also enclose herewith an appropriate Information Disclosure Statement, together with copies of relevant patents in our possession and Form PTO-1449. The publications enclosed with that Information Disclosure Statement are the same as those originally considered by the Examiner and already indicated of record. These are submitted merely as a convenience to the Examiner. We also enclose a copy of a Supplementary European Search Report. Copies of the cited publications are enclosed.

In light of the foregoing, we respectfully request prompt action on the merits and allowance of this reissue application.

Respectfully submitted,


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Attorney for Applicants

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Version with Markings to Show Changes Made to the Specification

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Version with Markings to Show Changes Made to the Claims

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7. (Amended) A biaxially stretched polyester film for forming a container, according to [claim 6] any one of Claims 1 - 4, characterized in that a DSC peak is present at 220° C. or lower.

8. (Amended) A biaxially stretched polyester film for forming a container, according to [claim 7] any one of Claims 1 - 4, characterized by containing 0.005 - 10% by weight of particles wherein the volume average particle diameter is 0.005 - 5 μm and the relative standard deviation σ expressed by the expression below is 0.5 or less:

$$\sigma = (\Sigma(Di-D)^2/n)^{1/2}/D$$

$$D = \Sigma Di/n$$

where

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Di: particle diameter (μm)

n: number of particles (number).

10. (Amended) A biaxially stretched polyester film for forming a container, according to claim [9] 8, wherein the length/breadth ratio of the particles is 1.0 - 1.2, and the Mohs hardness thereof is less than 7.

11. (Amended) A biaxially stretched polyester film for forming a container, according to claim [10] 8, characterized in that a metallic carboxylate salt is present on surfaces of the particles in an amount of 10^{-5} mol or more relative to 1 g of the particles.

12. (Amended) A biaxially stretched polyester film for forming a container, according to claim [10] 8, characterized in that the particles are aluminum silicate particles having the following composition:

$$0.9 \leq Si \leq 1.5$$

$$0.1 \leq Al \leq 0.8$$

$$0.1 \leq M \leq 0.8$$

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where

Si: number of moles of silicon atoms in 100 g of the particles,

Al: number of moles of aluminum atoms in 100 g of the particles,

M: number of moles of alkaline metal atoms in 100 g of the particle.

14. (Amended) A biaxially stretched polyester film for forming a container, according to claim [13] 12, characterized in that the volume average particle diameter D_w (μm) and the specific surface area S (m^2/g) of the aluminum silicate particles satisfy the relationship of $S \geq 3.5/D_w$.

15. (Amended) A biaxially stretched polyester film for forming a container, according to claim [14] 12, characterized in that the strength (S_{10}) at 10% deformation of the aluminum silicate particles satisfies the relationship of:

$$5 \text{ kgf/mm}^2 \leq S_{10} \leq 40 \text{ kgf/mm}^2.$$

16. (Amended) A biaxially stretched polyester film for forming a container, according to claim [15] 8, wherein the particles are organic macromolecular particles.

18. (Amended) A biaxially stretched polyester film for forming a container, according to claim [17] 8, characterized by containing 0.0001 - 1 % by weight of an anti-oxidizing agent.

19. (Amended) A biaxially stretched polyester film for forming a container, according to [claim 1] any one of Claims 1 - 4, characterized in that the film is formed after being thermally laminated on a metallic sheet.

20. (Amended) A method of producing a biaxially stretched polyester film for forming a container defined in [claim 1] any one of Claims 1 - 4, characterized by separately producing polyethylene terephthalate and polyethylene naphthalate, and then kneading them to obtain a mixture of polyethylene terephthalate and polyethylene naphthalate, and producing a film from the mixture.